Remarks

Claims 1, 3-10, 12-13, 15-20 are pending. Claims 1, 3-10, 12-13, 15-20 are rejected. Independent claims 1, and 8 were previously amended. Claims 2, 11, and 14 were previously cancelled. Claims 1, 8 and 13 have been currently amended. The Examiner has rejected claims 1 and 8 under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Itoh, "SCONE: Using Concurrent Objects for Low-level Operating system Programming" pages 385-398. The Examiner has rejected claims 3-7, 9-10, 12-13, and 15-20 as being unpatentable under 35 U.S.C. 103(a) over the admitted prior art in view of Itoh, "SCONE: Using Concurrent Objects for Low-level Operating System Programming" pages 385-398, and further in view of Matia "Kernel Korner Writing a Linux Driver" pages 1-12.

1. Independent Claims 1 and 8

The Examiner has rejected independent claims 1 and 8 as being obvious over admitted prior art further in view of Itoh. Applicants respectfully submit that the cited references do not anticipate the amended claims. Admitted prior art in view of Itoh do not contain each and every element of the claimed invention and, as such, the references cannot obviate the amended claims. To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

In particular, the combination of admitted prior art and Itoh fail to show at least one aspect present in independent claims 1 and 8, namely "wherein the compiled service layer acts as an interface between the kernel of the operating system and the at least one pre-compiled

executable module of the device driver, *such that the kernel cannot access proprietary information of the pre-compiled executable module,*" as required by the amended independent claims.

The Examiner acknowledges that the admitted prior art does not explicitly teach the device driver having a service layer that interfaces between the kernel of the operating system and at least one of the pre-compiled executable modules. (Office Action, page 3.) The Examiner cites the "service layer" in Itoh as an example service layer. (*Id.*) However, the Itoh reference's use of service layers is distinct from the service layer of the present invention. The Itoh reference proposes a method for replacing low-level system code of operating systems. (Itoh, page 385.) Under the guidance of the Itoh reference, it is possible to program low-level system code without the hazardous operations in manipulating such code because the programming used for the functions is object oriented and thus easily replaceable. (Itoh, page 385.) This is consistent with the goals of Itoh, which considers low-level system code as dispensable. In particular, Itoh discusses handling unpredictable changes that may affect device drivers by constructing dynamically replaceable low-level system code for these device drivers that would allow them to function *without needing a kernel rebuild or cold start.* (Itoh, pages 385-386.) In contrast, the present claims specifically discuss "compiling the service layer against the kernel" to effectuate the invention.

Thus, the low-level system code in Itoh is replaceable and the use of service layers in the Itoh reference is meant to facilitate that process: "We believe that the important design goals for making low-level system code replaceable are as follows." (Itoh, pages 386.) Because the low-level system code device drivers are meant to be replaceable, there is no discussion or use in the Itoh reference for a pre-compiled executable module having proprietary information. In Section 3.1, for example, the Itoh reference discusses the use of the object

oriented programming model "for implementing low-level system code as a dynamically installable/removable entity." (Itoh, page 387.) Thus, the device driver functionality code is implemented so it can be removed and replaced if any changes have occurred in the hardware or software. This is in contrast to the present invention which uses service layers to enable functionality of pre-compiled executable modules having proprietary information. In the present invention, the "compiled service layer acts as interface between the kernel . . . and the . . . pre-compiled . . . module, such that the kernel cannot access proprietary information of the pre-compiled module" rather than replacing the pre-compiled executable module as suggested by the Itoh reference.

In the Itoh reference, the system service layers provide implementation for primitive operations used by concurrent objects. (Itoh, page 388.) However, Itoh does not discuss a kernel that is unable to access the proprietary information in the low level system code or even if the low level system code contains proprietary information. Itoh never discusses proprietary information because Itoh is concerned with *replacing* system code with the service layer as opposed to preventing access to any proprietary information. Accordingly, the Itoh reference does not disclose at least "wherein the compiled service layer acts as an interface between the kernel of the operating system and the at least one pre-compiled executable module of the device driver, such that the kernel cannot access proprietary information of the pre-compiled executable module."

Amended independent claim 8 contains a similar limitation to claim 1: "wherein the executable module compiled from the open source service layer provides an interface between the kernel of the operating system and the at least one pre-compiled executable module, *such that the kernel cannot access proprietary information of the pre-compiled executable*

module." Accordingly, for the reasons discussed above, independent claim 8 is also allowable over the admitted prior art in view of Itoh.

2. Independent Claim 13

The Examiner has rejected claim 13 as being unpatentable over the admitted prior art in view of Itoh further in view of Matia. As for claim 13, the Examiner rejects it as a method for loading a device driver in a computer system that corresponds to the method claim 1 and method claim 3. However, as discussed above, the admitted prior art in view of Itoh further in view of Matia fail to disclose all of the limitations of amended independent claim 13. In particular, the Itoh reference fails to disclose "wherein the compiled service layer provides an interface between the kernel of the operating system and the precompiled driver modules, such that the kernel cannot access proprietary information of the pre-compiled executable module" for the same reasons as discussed with respect to claim 1, above. Accordingly, the cited reference do not render amended claim 13 obvious. Thus, Applicants respectfully request the rejection of these claims be withdrawn and that these claims be passed to issuance.

3. Dependent Claims 3-7, 9-10, 12, and 15-20

The rejection of the dependent claims will not be discussed herein, as these claims depend from otherwise allowable base claims. As such, Applicants respectfully request that the rejection of the dependent claims be withdrawn and that these claims be passed to issuance.
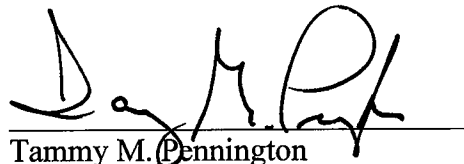
4. No Waiver

All of Applicants' arguments and amendments are without prejudice or disclaimer. Additionally, Applicants have merely discussed example distinctions from the cited references. Other distinctions may exist, and Applicants reserve the right to discuss these additional distinctions in a later Response or on Appeal, if appropriate. By not responding to additional statements made by the Examiner, Applicants do not acquiesce to the Examiner's

additional statements, such as, for example, any statements relating to what would be obvious to a person of ordinary skill in the art. The example distinctions discussed by Applicants are sufficient to overcome the anticipation rejections.

Conclusion

Applicants respectfully submit that the rejection of pending claims 1, 3-10, 12-13, 15-20 should be withdrawn and that these claims should be passed to issuance.

Respectfully submitted,

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